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Title : Social structure and behavior of bottlenose dolphins (Tursiops truncatus) in relation to shrimp trawlers in Southport, NC

Category : Behavior

Student : M.A./M.S.

Preferred Format : Either Oral or Poster Presentation

Abstract : Bottlenose dolphins are known to forage in association with shrimp trawlers, an activity referred to as trawler foraging. Since 1997 we have been conducting boat-based photo-identification surveys near Southport, NC, which hosts a large shrimp fishery in the summer and fall. We are using these data to test the following hypotheses: 1) that "trawler" dolphins do not associate with "non-trawler" dolphins, and thus form separate communities; and 2) that "trawler" dolphins spend more time socializing and less time feeding than do "non-trawler" dolphins. These hypotheses were derived from two recent studies. First, Chilvers and Corkeron (2002: Proc. Roy. Soc. Lond. 268:1901-1905) found separate, non-associating communities of "trawler" and "non-trawler" dolphins in Moreton Bay, Australia. Second, Jones and Sayigh (2002: Mar. Mamm. Sci. 18:374-393) found that dolphins in the Southport area have different activity and vocal patterns than those in nearby areas; they hypothesized that dolphins that associate with shrimp trawlers spend less time foraging than those that do not, thus leaving more of their time available for socializing. We examined data from dolphins that had been sighted at least three times in the Southport area between 1997 and 2002; "trawler" dolphins were seen at least twice with a trawler and "non-trawler" dolphins were never seen with a trawler. Although trawler and non-trawler sightings occurred in the same area and overlapped temporally, there were no associations among trawler and non-trawler dolphins. Associations within each group were relatively high (mean COA = 0.15 for both groups). Group sizes of trawler sightings were significantly larger than those of non-trawler sightings (mean = 24.8 vs. 12.1; $p=0.002$). Analysis of data from additional sightings and of activity budgets is ongoing. This study takes a novel approach by looking at potential impacts of fishery interactions on dolphin behavior and social structure.